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**PLYWOOD COVERED DITCH
INVESTIGATION REPORT**

**Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California**

June 9, 2003

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MFG, Inc.
consulting scientists and engineers
a Tetra Tech company

PLYWOOD COVERED DITCH INVESTIGATION REPORT

**Sierra Pacific Industries
Arcata Division Sawmill
2593 New Navy Base Road
Arcata, California**

June 9, 2003

Prepared For:

SIERRA PACIFIC INDUSTRIES

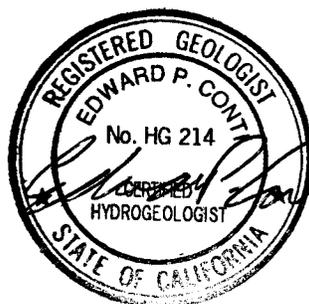
Prepared By:

MFG, INC.
1165 G Street, Suite E
Arcata, California 95521
(707) 826-8430

MFG Project No. 030229.8

PROFESSIONAL CERTIFICATION

This report was prepared by MFG, Inc. under the professional supervision of Edward P. Conti. The findings, recommendations, specifications and/or professional opinions presented in this report were prepared in accordance with generally accepted professional hydrogeologic practice, and within the scope of the project. There is no other warranty, either express or implied.



June 9, 2003

Edward P. Conti
C.H.G. No. HG 214
Senior Consulting Geologist
MFG, INC.

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1.0 INTRODUCTION

MFG, Inc. has prepared this report on behalf of Sierra Pacific Industries (SPI) to document soil sampling activities in the plywood covered ditch at SPI's Arcata Division Sawmill. This work was performed to satisfy the requirements of paragraph 18 of the Consent Decree between Ecological Rights Foundation and Sierra Pacific Industries, Inc. et al (case number C-01-0520-MEJ). The Arcata Division Sawmill is located at 2593 New Navy Base Road in Arcata, California (hereinafter "the Site"). The Site location is shown in Figure 1. A Site plan showing the location of the plywood covered ditch at the Arcata Division Sawmill is presented in Figure 2. An enlargement of the plywood covered ditch area is presented in Figure 3.

This work was performed in accordance with the scope of work presented in MFG's *Plywood Covered Ditch Investigation* letter to SPI, dated March 31, 2003. Investigation activities consisted of collecting and chemically analyzing soil samples from two locations in the ditch. This report summarizes the methods and results of the soil sampling and analysis activities.

This report is organized as described below. Background information is provided in Section 2.0. The geology and hydrogeology of the Site is discussed in Section 3.0. The soil sampling and analysis methods and results are described in Section 4.0. Disposal of investigation-derived waste is presented in Section 5.0. Additional work planned is presented in Section 6.0, and references cited in this report are listed in Section 7.0.

2.0 BACKGROUND

2.1 Site Description

The Site is located on the Samoa Peninsula in Arcata, Humboldt County, California (Figure 1). A Site plan showing features of the Arcata Division Sawmill is included in Figure 2. The Site features in the area of the plywood covered ditch are included in Figure 3.

The Site was originally undeveloped land, consisting of sand dunes and mud flats, until approximately 1950 when SPI converted the land into a lumber mill. During conversion, SPI filled in portions of the Site. SPI began operations at this facility before the area was completely filled in. The mill has been active from 1950 to present day.

2.2 Plywood Covered Ditch

The plywood covered ditch is located in the southwestern portion of the property (Figure 2). The ditch is approximately 20 feet long and a few feet wide. The ditch runs between the parts storage area and the oil shed, immediately northwest of the Hyster Shop (Figure 3). The ditch was excavated to install an underground electrical conduit and was covered with plywood during the installation process. The ditch currently contains an electrical conduit and is backfilled with native soil. It is no longer covered with plywood.

3.0 SITE GEOLOGY AND HYDROGEOLOGY

The subsurface lithology and hydrogeology at the Site was previously investigated and described by Environet Consulting (Environet, 2003). The subsurface lithology consists primarily of fine- to medium-grained sand of apparent sand dune origin to a depth of approximately 22 feet below ground level (bgl), the maximum depth explored during previous drilling activities at the Site. The sand is sporadically interbedded with thin lenses of "Bay Mud," consisting of a mixture of sand and silt.

In the eastern portion of the Site, groundwater has been measured in existing monitoring wells at depths ranging from approximately 1 to 5 feet bgl and the groundwater flow direction is generally to the east, toward the Mad River Slough (Figure 2) (Environet, 2003). Groundwater was measured at a depth of approximately 2 feet bgl in a temporary monitoring well that was installed in April 2003 in the vicinity of the Truck Shop, which is located immediately south of the Hyster Shop. Based on the proximity of the Truck Shop to Humboldt Bay, the groundwater flow direction in this area is likely to the south-southeast, toward Humboldt Bay.

4.0 SOIL SAMPLING METHODS AND RESULTS

4.1 Field Methods

Prior to soil sampling activities, MFG obtained a boring permit from the Humboldt County Division of Environmental Health (HCDEH) (Appendix A). Underground Service Alert (USA) was contacted to mark the area for underground utilities and SPI personnel reviewed facility drawings for the presence of underground utilities in the vicinity of the plywood covered ditch.

On April 3, 2003, MFG attempted to collect soil samples using a hand auger; however, auger refusal was encountered at a depth of approximately 6 inches bgl at 3 attempted locations because of the gravelly nature of the subsurface material in the area. The three hand auger locations were subsequently filled with neat cement. On April 8, 2003, MFG returned to the area to collect soil samples at two locations using a shovel and stainless steel trowel. The two soil sampling locations (PD-1 and PD-2) are shown in Figure 3.

Soil samples were collected at the ground surface (0.0 to 0.5 feet bgl) and at a depth of 2.0 to 2.5 feet bgl at each location. Soil collected from each sample interval for chemical analysis was placed directly into wide-mouth glass jars with Teflon[®]-lined caps using the stainless steel trowel. The sample containers were labeled and immediately placed in an ice-cooled, insulated chest for transport to the laboratory. A chain-of-custody record was completed for the samples and accompanied the samples until receipt by the laboratory.

The soil was described in the field for lithologic classification, color and moisture content in accordance with the American Society of Testing and Materials (ASTM) Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) D 2488. Indications of contamination, including observations regarding odor or staining, if any, were noted on a boring log for each location. The boring logs are included as Appendix B. Headspace measurements of soil from each sample interval were made in the field using a Thermo-Environmental Instruments Model 580B portable photoionization detector (PID). The PID was calibrated using a 96 parts per million by volume (ppmv) isobutylene gas standard. The response factor of the PID was set such that the instrument would read in ppmv as isobutylene. To prepare the soil for headspace measurements, the soil was placed in a sealable plastic bag, the bag was sealed, and then the soil was broken up and agitated. The bag was allowed to stand for approximately 10

minutes, agitated again, and then the PID probe was inserted into the bag. The highest PID reading was recorded for each sample and noted on the boring log opposite the respective sample interval (Appendix B). At the conclusion of sampling activities, the soil that had been removed with the shovel was returned to each location and manually compacted to the surrounding grade. Photographs of the soil sampling activities are presented in Appendix C.

Sampling equipment was decontaminated before and after use at each sampling location by washing it in a solution of Liquinox[®] detergent and water and triple rinsing with distilled water.

Soil cuttings and equipment wash water generated during sampling activities were placed in separate steel, 55-gallon, Department of Transportation (DOT)-approved drums that were sealed and labeled and are being temporarily stored in a secure location at the Site pending disposal (Section 5.0).

4.2 Stratigraphy and Field Observations

The soil encountered during sampling activities consisted of concrete debris, gravel and medium sand from the ground surface to approximately 2.0 feet bgl. Silty sand with clay was encountered from approximately 2.0 to 2.5 feet bgl, the maximum depth explored. The depth to saturated soil was approximately 1.2 feet bgl. A slight organic-like odor was detected in each sample; however, evidence of soil staining was not observed (Appendix B). The PID readings from headspace measurements of the soil samples ranged from 6.0 to 44 ppmv (Appendix B).

4.3 Chemical Analysis Methods and Results

The soil samples were submitted for chemical analysis to Alpha Analytical Laboratories Inc. (Alpha) of Ukiah, California. The samples were analyzed for the following constituents:

- Oil and grease using EPA Method 9071B with silica gel cleanup;
- Total extractable petroleum hydrocarbons (TEPH) as diesel and motor oil using modified EPA Method 8015 with silica gel cleanup;
- Chlorinated phenols using the Canadian Pulp Method; and

- Volatile organic compounds (VOCs) using EPA Method 8260B.

The chemical analysis results are summarized in Table 1. Copies of the laboratory report and chain-of-custody record are included in Appendix D.

Oil and Grease was detected in the four soil samples at concentrations ranging from 1,100 to 8,200 milligrams per kilogram (mg/kg). Total extractable petroleum hydrocarbons (TEPH) as diesel was detected in the four soil samples at concentrations ranging from 17 to 330 mg/kg. However, the laboratory report indicated that the diesel range organics in samples PD-1 (0-.5) and PD-2 (0-.5), collected from 0.0 to 0.5 feet bgl, were primarily due to overlap from a heavier oil range compound. TEPH as motor oil was detected in the four soil samples at concentrations ranging from 160 to 1,300 mg/kg (Table 1).

Chlorinated phenols were not detected in any of the soil samples. The only VOCs detected included: chlorobenzene, 1,4-dichlorobenzene, naphthalene and 1,2,4-trimethylbenzene at concentrations ranging from 0.24 to 0.49 mg/kg in soil sample PD-1 (2-2.5) collected at a depth of 2.0 to 2.5 feet bgl; and 1,4-dichlorobenzene at a concentration of 0.35 mg/kg in soil sample PD-2 (2-2.5) collected at a depth of 2.0 to 2.5 feet bgl. All other VOCs were not detected at or above their respective laboratory reporting limits in the four soil samples (Table 1).

5.0 DISPOSAL OF INVESTIGATION-DERIVED WASTE

Soil cuttings and equipment wash water are being stored temporarily at the Site in steel, 55-gallon drums (Section 4.1). Following completion of the additional work described in Section 6.0, investigation-derived waste from this investigation and the waste generated during the additional work will be disposed of in accordance with applicable regulations.

6.0 ADDITIONAL WORK PLANNED

SPI plans to remove the soil covering the electrical conduit and pour concrete in the area. This is a necessary safety action to secure the electrical conduit and protect mill personnel. Since petroleum hydrocarbons and low levels of some volatile organic compounds (VOCs) were detected in the soil samples collected during this investigation, additional soil in the vicinity of the plywood covered ditch will be removed in conjunction with the maintenance work described above. We anticipate excavating an area approximately 30 feet by 4 feet to a depth ranging from 2 to 3 feet bgl. The actual area and depth of excavation will be determined in the field based on field observations, physical access, and the stability of nearby structures.

Excavated soil will be placed in covered soil bins, drums, and/or a covered, bermed area at the Site. The excavated soil will be stored temporarily at the Site and then disposed of in conjunction with the soil generated during the plywood covered ditch investigation (Section 5.0).

If groundwater is encountered in the excavation, groundwater will be pumped from the pit and placed in temporary, above-ground holding tanks or drums at the Site. The volume of groundwater extracted will depend on the depth encountered, the size of the excavation, and the stability of the excavation sidewalls. A sample of the extracted groundwater will be collected and analyzed for oil and grease, total extractable petroleum hydrocarbons (TEPH) as diesel and motor oil, and VOCs. The extracted groundwater will be stored temporarily at the Site pending the results of the chemical analyses and then disposed of along with equipment wash water generated during this work and during the plywood covered ditch investigation (Section 5.0).

Following completion of the excavation activities, confirmation soil and groundwater (if encountered) samples will be collected. At a minimum, 4 confirmation soil samples (one from each sidewall) and one groundwater sample will be collected. The confirmation samples will be analyzed for oil and grease, total extractable petroleum hydrocarbons (TEPH) as diesel and motor oil, and VOCs.

The excavation will be backfilled with clean fill and concrete or asphalt will be placed at the ground surface.

MFG will prepare a report that summarizes the methods and results of the work discussed above. Observations made during the excavation activities will be summarized in the report. The report will include a Site plan showing the excavation area as well as the locations of confirmation samples. The report will also include tabulated chemical analysis data, copies of laboratory reports and sample chain-of-custody records, and documentation of the management and disposal of investigation-derived waste.

7.0 REFERENCES

Environet Consulting (Environet), 2003, *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*: January 30.

TABLE 1

**SUMMARY OF CHEMICAL ANALYSIS RESULTS OF SOIL SAMPLES
FOR OIL AND GREASE, TEPH, CHLORINATED PHENOLS AND VOCs**

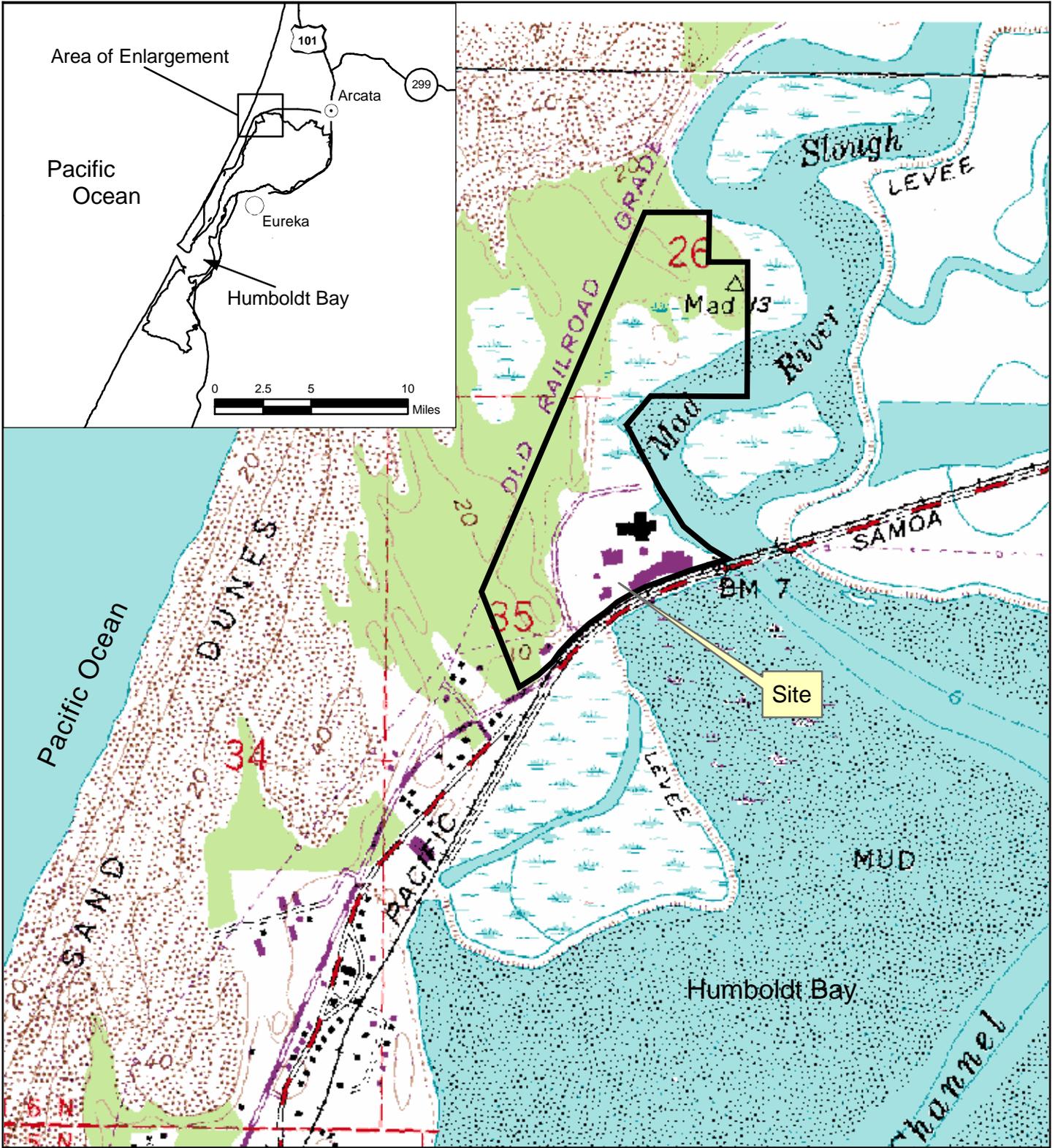
Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

SAMPLE ID	SAMPLE DEPTH (feet bgl)	SAMPLE DATE	LITHOLOGY	OIL & GREASE (mg/kg)	TEPH AS DIESEL (mg/kg)	TEPH AS MOTOR OIL (mg/kg)	CHLORINATED PHENOLS (mg/kg)	CHLORO-BENZENE (mg/kg)	1,4-DICHLORO-BENZENE (mg/kg)	NAPH-THALENE (mg/kg)	1,2,4-TRIMETHYL-BENZENE (mg/kg)	OTHER VOCs (mg/kg)
Reporting Limit:				50	10	20	1.0	0.0050	0.0050	0.0050	0.0050	0.0050-0.020
PD-1(0-.5)	0.0-0.5	8-Apr-03	SAND	1,200	17 ¹	160	ND	ND	ND	ND	ND	ND
PD-1(2-2.5)	2.0-2.5	8-Apr-03	SILTY SAND W/ CLAY	7,800	330	1,300	ND	0.49	0.39	0.24	0.33	ND [0.22-0.87]
PD-2(0-.5)	0.0-0.5	8-Apr-03	SAND	1,100	20 ¹	250	ND	ND	ND	ND	ND	ND
PD-2(2-2.5)	2.0-2.5	8-Apr-03	SILTY SAND W/ CLAY	8,200	140	850	ND	ND [0.22]	0.35	ND [0.22]	ND [0.22]	ND [0.22-0.87]

NOTES:

- TEPH Total extractable petroleum hydrocarbons. Analyzed using modified EPA Method 8015 with silica gel cleanup and quantified against diesel and motor oil standards.
- VOCs Volatile organic compounds. Analyzed using EPA Method 8260B.
- bgl Below ground level.
- mg/kg Milligrams per kilogram.
- ND Not detected at or above the laboratory reporting limit indicated at the top of the column.
- [] Indicates the reporting limit is different than that shown at the top of the column.
- 1. Laboratory indicated that the result is primarily due to overlap from a heavier oil range compound.

Oil and Grease was analyzed using EPA Method 9071B with silica gel cleanup.
Chlorinated phenols were analyzed using the Canadian Pulp Method and included the following target analytes: 2,4,6-trichlorophenol; 2,3,5,6-tetrachlorophenol; 2,3,4,6-tetrachlorophenol; 2,3,4,5-tetrachlorophenol; and pentachlorophenol.



Source: USGS 24k Digital Raster Graph, Eureka Quadrangle, Year - 1972

— Site Boundary

0 500 1,000 2,000

Feet

Approximate Scale



LOCATION MAP

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Project No. 030229

By: I.Pryor

Date: 6/6/03

Checked: O.Plocher

Figure 1

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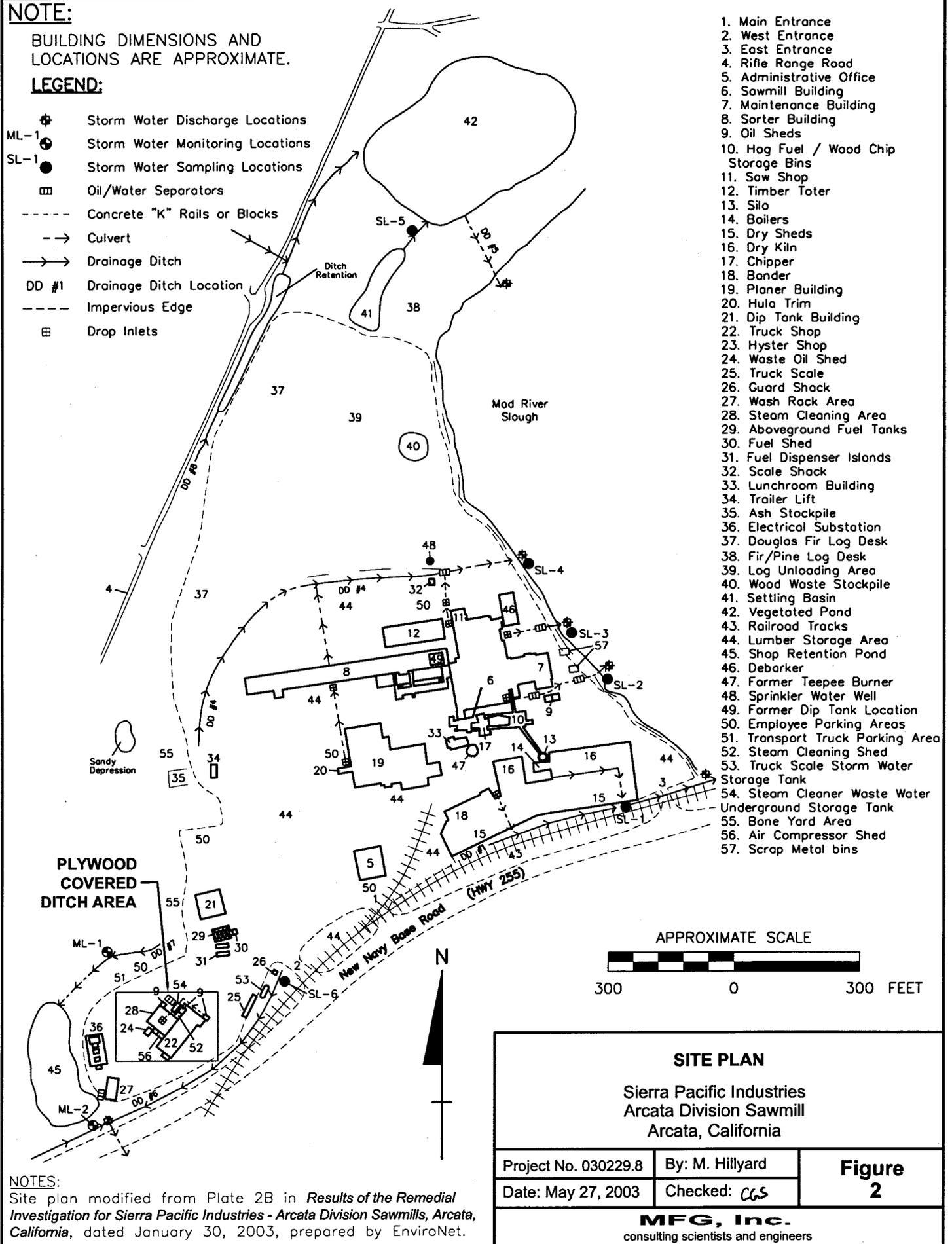
NOTE:

BUILDING DIMENSIONS AND LOCATIONS ARE APPROXIMATE.

LEGEND:

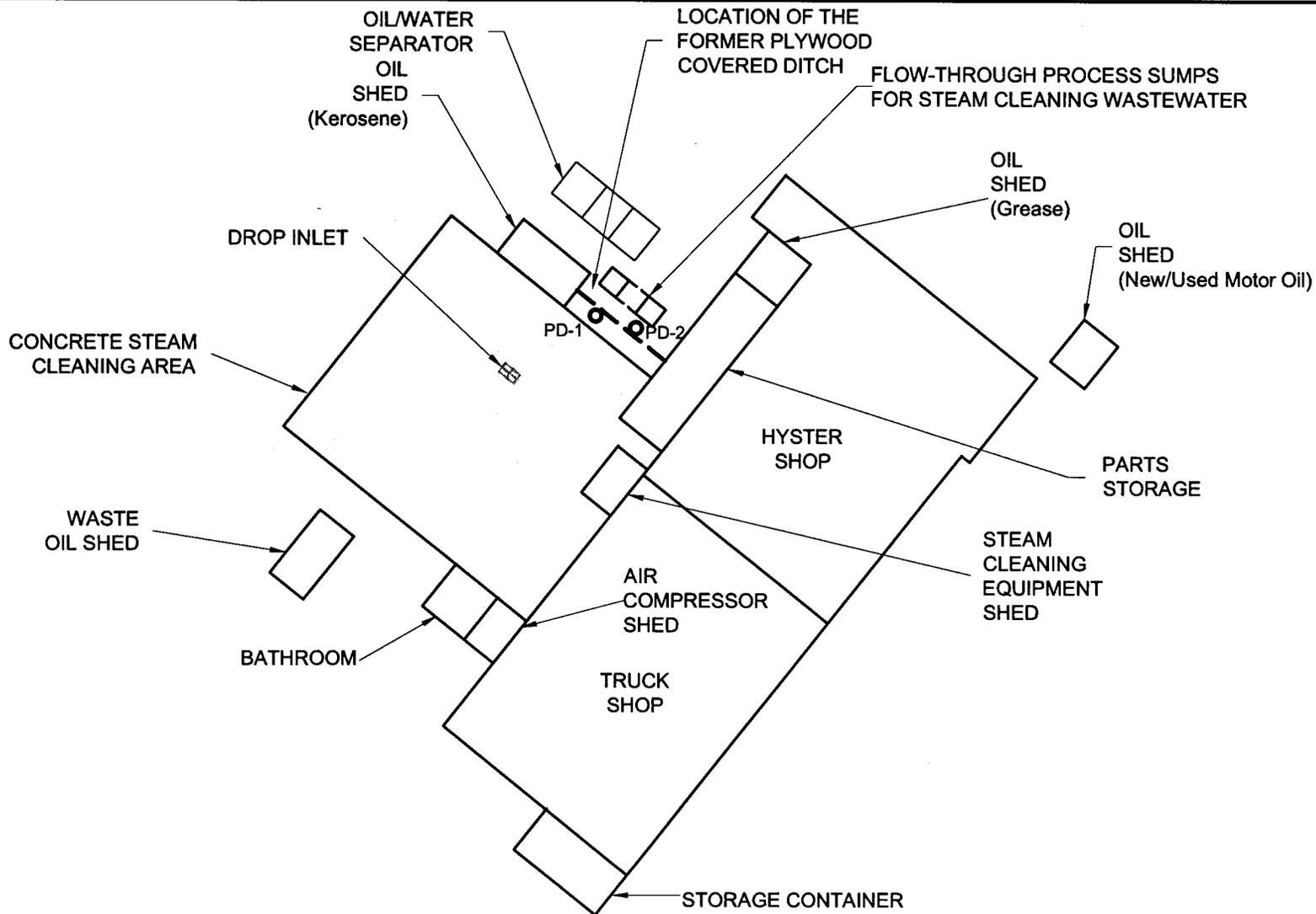
- ⊕ Storm Water Discharge Locations
- ML-1 ● Storm Water Monitoring Locations
- SL-1 ● Storm Water Sampling Locations
- ▣ Oil/Water Separators
- Concrete "K" Rails or Blocks
- - -> Culvert
- - -> Drainage Ditch
- DD #1 Drainage Ditch Location
- Impervious Edge
- ⊞ Drop Inlets

1. Main Entrance
2. West Entrance
3. East Entrance
4. Rifle Range Road
5. Administrative Office
6. Sawmill Building
7. Maintenance Building
8. Sorter Building
9. Oil Sheds
10. Hog Fuel / Wood Chip Storage Bins
11. Saw Shop
12. Timber Toter
13. Silo
14. Boilers
15. Dry Sheds
16. Dry Kiln
17. Chipper
18. Bander
19. Planer Building
20. Hula Trim
21. Dip Tank Building
22. Truck Shop
23. Hyster Shop
24. Waste Oil Shed
25. Truck Scale
26. Guard Shack
27. Wash Rack Area
28. Steam Cleaning Area
29. Aboveground Fuel Tanks
30. Fuel Shed
31. Fuel Dispenser Islands
32. Scale Shack
33. Lunchroom Building
34. Trailer Lift
35. Ash Stockpile
36. Electrical Substation
37. Douglas Fir Log Desk
38. Fir/Pine Log Desk
39. Log Unloading Area
40. Wood Waste Stockpile
41. Settling Basin
42. Vegetated Pond
43. Railroad Tracks
44. Lumber Storage Area
45. Shop Retention Pond
46. Debarker
47. Former Teepee Burner
48. Sprinkler Water Well
49. Former Dip Tank Location
50. Employee Parking Areas
51. Transport Truck Parking Area
52. Steam Cleaning Shed
53. Truck Scale Storm Water Storage Tank
54. Steam Cleaner Waste Water Underground Storage Tank
55. Bone Yard Area
56. Air Compressor Shed
57. Scrap Metal bins



NOTES:
 Site plan modified from Plate 2B in *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by EnviroNet.

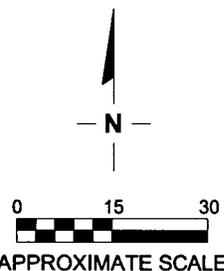
SITE PLAN		
Sierra Pacific Industries Arcata Division Sawmill Arcata, California		
Project No. 030229.8	By: M. Hillyard	Figure 2
Date: May 27, 2003	Checked: CGS	
MFG, Inc. consulting scientists and engineers		



LEGEND

- PD-1 APPROXIMATE LOCATION AND DESIGNATION OF SOIL SAMPLES
- APPROXIMATE LOCATION OF ELECTRICAL CONDUIT IN THE FORMER PLYWOOD COVERED DITCH

NOTE:
 Site plan modified from Plate 2B in *Results of the Remedial Investigation for Sierra Pacific Industries - Arcata Division Sawmills, Arcata, California*, dated January 30, 2003, prepared by EnviroNet.



PLYWOOD COVERED DITCH SAMPLE LOCATIONS

Sierra Pacific Industries
 Arcata Division Sawmill
 Arcata, California

Project No. 030229.8	By: M. Hillyard
Date: 5/27/03	Checked: CGS

Figure 3

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APPENDIX A

**Humboldt County Division of Environmental Health
Boring Permit**

APR 1 2003

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS
WELL and BORING PERMIT APPLICATION

Facility ID # 1NHU526 Permit # 27-E

Facility Name: Sierra Pacific Industries, Arcata Sawmill Division

Site Address: 2293 Samsa Road, Arcata, CA

Site Owner: Sierra Pacific Industries Telephone: 530-378-8000

Address: PO Box 496028 Redding, CA 96049-6028 AP#: _____

RP Name: Sierra Pacific Industries Telephone: 530-378-8000

Address: PO Box 496028 Redding, CA 96049-6028

Consultant: MFG, Inc. Telephone: 707-826-8430

Address: 1165 G. street, Suite E Arcata, CA 95521 Reg.#/Type: _____

Driller: NA, hand augered Telephone: _____

Address: _____ C-57 Lic.#: _____

# On-site		# Off-site	
Wells	Borings <u>✓ 7</u>	Wells	Borings

Activity: Construct Destroy Repair/Modify Electrode Type: _____

Well Type: Monitoring Well Injection Well Vapor Extraction Geologic Boring
 Extraction Well Piezometer Vapor Point Soil Gas Survey
 Vadose Well Cathodic Protection Direct Push Boring Temporary Well Point

Investigation Type: Site Assessment Disposal Practice UST Other*
 Surface Contamination Surface Impoundment AST
*Specify: _____

Investigation Phase: Initial Subsequent Remediation Closure

Suspected Contaminants: PCP, TCP, Dioxin, furan, TPH D, oil, grease

Disposal/Containment for Soil Cuttings: Ashburry / 55-gallon drum

Disposal/Containment for Rinseate: Ashburry / 55-gallon drum

Disposal/Containment for Development Water: NA

Permits will not be processed with out the following information:

- Scaled Construction Detail
- Detailed Site Plan
- Lead Agency Approval Letter
- Off Site Well Requirements:
 - Legal Right of Entry
 - Off Site Address/Location
 - Encroachment Permit
 - Coastal Zone Permit
- Appropriate Fees
- Copy of Workplan (if not on file at HCDEH)

Proposed Work Date: Apr. 3 '03

HUMBOLDT COUNTY DIVISION of ENVIRONMENTAL HEALTH - HAZARDOUS MATERIALS UNIT
WELL and BORING PERMIT APPLICATION

Facility ID # 1NHU526 Permit # 27-E

I hereby agree to comply with all laws, ordinances and regulations of the county of Humboldt and State of California pertaining to water well construction. I will contact the Humboldt County Hazardous Materials Unit at (707) 445-6215 five (5) working days prior to commencing this work. I will furnish to the County of Humboldt, Division of Environmental Health, and the owner a legible copy of the State Water Well Completion Report (form DWR 188) within fifteen (15) days after completion of work to obtain final approval of the well(s). I acknowledge that the application will become a permit ONLY after site approval by the Local Implementing Agency (HCDEH, NCRWQCB, DTSC, EPA). I understand this permit is not transferable and expires one hundred twenty (120) days from the date of issuance.

Certificates of Insurance:

- A currently effective General Liability Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.
- A currently effective Worker's Compensation Certificate of Insurance is on file with this office, endorsed to include the Humboldt County Division of Environmental Health as additional named insured.

Signature of Well Driller - no proxies - original signature only in blue ink

Date

- Well identification number and type must be affixed to exterior surface of security structure.
- The applicant is responsible for notifying Underground Services Alert at least 48 hours prior to the scheduled work date.
- A State of California Department of Water resources Well Completion Report (Form DWR 1-88) must be filed within 15 days of completion of work for all well completions and destructions.
- A licensed California C-57 Well Driller is required for all wells and direct push work.

FOR OFFICE USE ONLY

Permit Approval: Norman Crawford Date: 4/1/2003
Fee: \$116⁰⁰ Date: 4/1/2003 Receipt: 215399

Initial Inspection: _____ Date: _____
Final Inspection: _____ Date: _____

APPENDIX B

Boring Logs

ABBREVIATIONS/SYMBOLS USED IN BORING LOGS

GENERAL

PID - Photoionization Detector
OVM - Organic Vapor Meter
ppm - parts per million in air
sfc csg - surface casing
USCS - Unified Soil Classification System
NGVD - National Geodetic Vertical Datum of 1929
NAVD - North American Vertical Datum of 1988
NA - Not Analyzed

slt - slight or slightly
bgl - below ground level
DTW - depth to water

COLORS

v - very
lt - light
dk - dark
yel - yellow/yellowish
bm - brown/brownish
red-bm - reddish brown
a.a. - as above
(10YR 4/6) - Munsell notation
(hue value/chroma)

SAND GRAIN SIZE

VF - Very Fine
F - Fine
Med - Medium
Crs - Coarse

DENSITY/STIFFNESS

Med - Medium
V - Very

GEOLOGICAL CONTACTS

———— - Observed Contact
- - - - - Inferred Contact

GEOTECHNICAL

L.L. - Liquid Limit in percent
P.I. - Plasticity Index in percent
K - Vertical Hydraulic Conductivity
(permeability) in cm/sec

MOISTURE CONTENT

▼ - Observed top of saturated
soil interval

NOTE:

Field soil logging procedures were performed in accordance with ASTM D-2488-93 (Visual-Manual Procedure).

EXPLANATION FOR BORING LOGS

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LOG OF BORING PD-1

(Page 1 of 1)

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Drilling Agency : MFG, Inc.
Drilling Method : Shovel
Sampler Type : Stainless steel trowel
Sampling Method : Grab sample
Ground Elevation : Not Surveyed

Logged By : Jason Triolo
Reviewed By : Christopher Spill, R.G.

MFG Project No. 030229.8

Date Started: April 8, 2003
Date Finished: April 8, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (inches)	REMARKS
0	SAND: dk brn (10YR 3/3); Med sand, few subangular F gravel and rootlets, dry.	SP	1	6	PID calibrated using 96 ppmv isobutylene.
	SAND w/ GRAVEL: dk brn (10YR 2/1); Med sand, some F subangular gravel, little concrete fragments, trace wood chips, moist.	SP			PID = 23 ppmv (0.0 - 0.5 feet bgl). Slight organic odor.
2	SILTY SAND w/ CLAY: v. dk grayish brn (10YR 3/2); Med sand, some silt, trace clay, trace wood chips, wet.	SM	2	6	PID = 44 ppmv (2.0 - 2.5 feet bgl). Slight organic odor.



Neat Cement

NOTE:

1. Depth to water measured at 1.25 feet bgl.



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LOG OF BORING PD-2

(Page 1 of 1)

Sierra Pacific Industries
Arcata Division Sawmill
Arcata, California

Drilling Agency : MFG, Inc.
Drilling Method : Shovel
Sampler Type : Stainless steel trowel
Sampling Method : Grab sample
Ground Elevation : Not Surveyed

Logged By : Jason Triolo
Reviewed By : Christopher Spill, R.G.

MFG Project No. 030229.8

Date Started: April 8, 2003
Date Finished: April 8, 2003

Depth in Feet	DESCRIPTION	USCS	Sample Interval	Recovery (inches)	REMARKS
0	SAND: dk brn (10YR 2/1); Med sand, few subangular F gravel and rootlets, dry.	SP	1	6	PID calibrated using 96 ppmv isobutylene.
	CLAYEY SAND w/ GRAVEL: v. dk grey (10YR 3/2); Med sand, some subangular F gravel, moist. some wood chip fragments.	SC			PID = 6.0 ppmv (0.0 - .5 feet bgl). Slight organic odor
2	SILTY SAND w/ CLAY: v. dk grey (10YR 3/2); Med sand, some silt, few subrounded F gravel, few clay, wet.	SM	2	6	PID = 20 ppmv (2.0 - 2.5 feet bgl).
3	<p>NOTE: 1. Depth to water measured at 1.25 feet bgl.</p> 				

APPENDIX C

Photographs



Picture looking southwest showing the location of the Plywood Covered Ditch (now filled and not covered with plywood) with sampling locations PD-1 and PD-2.



Picture looking southeast showing sampling locations PD-1 and PD-2.



Soil sample location PD-1.



Soil sample location PD-2.

APPENDIX D

**Laboratory Report and Chain of Custody Record
for Soil Samples**



Alpha Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482

e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

19 May 2003

MFG, Inc - Arcata

Attn: Matt Hillyard

1165 G. Street, Suite E

Arcata, CA 95521

RE: SPI Arcata Sawmill

Work Order: A304264

Enclosed are the results of analyses for samples received by the laboratory on 04/09/03 15:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Cheryl Watson For Sheri L. Speaks
Project Manager

This represents an amended copy
of the original report

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MAY 23 2003

Tetra Tech/MFG, Inc.



Alpha Analytical Laboratories Inc.

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CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Alpha Analytical Laboratories, Inc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample type 'Soil' and 'Sampled: 04/08/03 00:00'. Lists various compounds like Acetone, Benzene, etc., with their respective results and detection limits.

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Handwritten signature of Cheryl Watson

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Project Manager

5/19/03



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Client Code: MFGARC
Client PO/Reference:

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample details for PD-1 (0-5) (A304264-01) and a list of Volatile Organic Compounds by EPA Method 8260B (cont'd).

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Contains sections for Volatile Organic Compounds, Chlorinated Phenols, Conventional Chemistry Parameters, and TPH as Diesel and Motor Oil.

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Contains data for Volatile Organic Compounds by EPA Method 8260B (cont'd) with various chemical names and results.

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Client Code: MFGARC
Client PO/Reference:

Alpha Analytical Laboratories, Inc.

Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample type 'Soil', sample date '04/08/03 00:00', and various chemical compounds like Hexachlorobutadiene, Naphthalene, etc.

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Contains data for Chlorinated Phenols, Conventional Chemistry Parameters, and Volatile Organic Compounds.

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Client Code: MFGARC
Client PO/Reference:

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample type 'Soil' and various chemical compounds like Naphthalene, Styrene, etc.

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Contains data for Chlorinated Phenols, Conventional Chemistry Parameters, TPH, and Volatile Organic Compounds.

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Order Number: A304264
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Client Code: MFGARC
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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample type 'Soil' and 'Sampled: 04/08/03 00:00'. Lists various organic compounds and their results.

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Client Code: MFGARC
Client PO/Reference:

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Table with columns: METHOD, BATCH, PREPARED, ANALYZED, DILUTION, RESULT, POL, NOTE. Includes sample type 'Soil' and various chemical compounds like n-Propylbenzene, Styrene, etc.

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<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
A304264	04/09/2003 15:30	MFGARC	

SourceResult

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32209 - EPA 5030 Soil MS										
Blank (AD32209-BLK1)										
Prepared: 04/15/03 Analyzed: 04/16/03										
Acetone	ND	0.87	mg/kg							
Benzene	ND	0.22	"							
Bromobenzene	ND	0.22	"							
Bromochloromethane	ND	0.22	"							
Bromodichloromethane	ND	0.22	"							
Bromoform	ND	0.22	"							
Bromomethane	ND	0.22	"							
n-Butylbenzene	ND	0.22	"							
sec-Butylbenzene	ND	0.22	"							
tert-Butylbenzene	ND	0.22	"							
Carbon tetrachloride	ND	0.22	"							
Chlorobenzene	ND	0.22	"							
Chloroethane	ND	0.22	"							
Chloroform	ND	0.22	"							
Chloromethane	ND	0.22	"							
2-Chlorotoluene	ND	0.22	"							
4-Chlorotoluene	ND	0.22	"							
Dibromochloromethane	ND	0.22	"							
1,2-Dibromo-3-chloropropane	ND	0.22	"							
1,2-Dibromoethane (EDB)	ND	0.22	"							
Dibromomethane	ND	0.22	"							
1,2-Dichlorobenzene	ND	0.22	"							
1,3-Dichlorobenzene	ND	0.22	"							
1,4-Dichlorobenzene	ND	0.22	"							
Dichlorodifluoromethane	ND	0.22	"							
1,1-Dichloroethane	ND	0.22	"							

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Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes a list of compounds like 1,2-Dichloroethane, 1,1-Dichloroethene, etc., with results mostly 'ND'.

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Client Code: MFGARC
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes sections for Blank (AD32209-BLK1) and LCS (AD32209-BS1).

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Order Number Receipt Date/Time Client Code Client PO/Reference
A304264 04/09/2003 15:30 MFGARC

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with 11 columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like Carbon tetrachloride, Chlorobenzene, etc.

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A304264 04/09/2003 15:30 MFGARC

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like Hexachlorobutadiene, Isopropylbenzene, etc.

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<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
A304264	04/09/2003 15:30	MFGARC	

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32209 - EPA 5030 Soil MS										
LCS (AD32209-BS1)					Prepared: 04/15/03		Analyzed: 04/16/03			
Xylenes (total)	4.51	0.22	"	4.05		111	75-113			
Surrogate: Dibromofluoromethane	4.85		"	5.41		89.6	70-130			
Surrogate: Toluene-d8	5.69		"	5.41		105	70-130			
Surrogate: Bromofluorobenzene	5.76		"	5.41		106	70-130			
LCS Dup (AD32209-BSD1)					Prepared: 04/15/03		Analyzed: 04/16/03			
Acetone	4.62	0.87	mg/kg	5.33		86.7	3-147	3.82	25	
Benzene	1.24	0.22	"	1.35		91.9	71-116	2.39	25	
Bromobenzene	1.44	0.22	"	1.35		107	87-112	1.38	25	
Bromochloromethane	1.17	0.22	"	1.35		86.7	77-113	5.26	25	
Bromodichloromethane	1.22	0.22	"	1.35		90.4	85-121	10.9	25	
Bromoform	1.48	0.22	"	1.35		110	86-124	1.34	25	
Bromomethane	1.37	0.22	"	1.35		101	47-128	1.47	25	
n-Butylbenzene	1.37	0.22	"	1.35		101	66-113	0.00	25	
sec-Butylbenzene	1.39	0.22	"	1.35		103	76-115	4.23	25	
tert-Butylbenzene	1.40	0.22	"	1.35		104	77-120	0.00	25	
Carbon tetrachloride	1.42	0.22	"	1.35		105	67-118	2.78	25	
Chlorobenzene	1.39	0.22	"	1.35		103	79-114	5.93	25	
Chloroethane	1.20	0.22	"	1.35		88.9	57-121	6.45	25	
Chloroform	1.28	0.22	"	1.35		94.8	75-115	3.83	25	
Chloromethane	1.16	0.22	"	1.35		85.9	60-110	8.26	25	
2-Chlorotoluene	1.48	0.22	"	1.35		110	75-113	4.62	25	
4-Chlorotoluene	1.46	0.22	"	1.35		108	73-110	2.03	25	
Dibromochloromethane	1.46	0.22	"	1.35		108	85-121	11.6	25	
1,2-Dibromo-3-chloropropane	1.42	0.22	"	1.35		105	70-120	2.78	25	
1,2-Dibromoethane (EDB)	1.47	0.22	"	1.35		109	82-122	2.68	25	
Dibromomethane	1.36	0.22	"	1.35		101	75-117	1.48	25	

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--------------------------------	--	------------------------------	----------------------------

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32209 - EPA 5030 Soil MS										
LCS Dup (AD32209-BSD1)				Prepared: 04/15/03 Analyzed: 04/16/03						
1,2-Dichlorobenzene	1.37	0.22	"	1.35		101	80-115	1.45	25	
1,3-Dichlorobenzene	1.43	0.22	"	1.35		106	77-123	2.76	25	
1,4-Dichlorobenzene	1.35	0.22	"	1.35		100	66-116	0.00	25	
Dichlorodifluoromethane	1.13	0.22	"	1.35		83.7	54-107	2.62	25	
1,1-Dichloroethane	1.38	0.22	"	1.35		102	74-121	5.20	25	
1,2-Dichloroethane	1.27	0.22	"	1.35		94.1	73-116	3.86	25	
1,1-Dichloroethene	1.35	0.22	"	1.35		100	60-124	10.5	25	
cis-1,2-Dichloroethene	1.26	0.22	"	1.35		93.3	77-117	6.15	25	
trans-1,2-Dichloroethene	1.35	0.22	"	1.35		100	61-120	2.92	25	
1,2-Dichloropropane	1.22	0.22	"	1.35		90.4	79-120	7.11	25	
1,3-Dichloropropane	1.44	0.22	"	1.35		107	80-116	4.98	25	
2,2-Dichloropropane	1.31	0.22	"	1.35		97.0	27-151	0.766	25	
1,1-Dichloropropene	1.28	0.22	"	1.35		94.8	57-119	0.784	25	
cis-1,3-Dichloropropene	1.29	0.22	"	1.35		95.6	81-119	1.54	25	
trans-1,3-Dichloropropene	1.37	0.22	"	1.35		101	86-128	0.727	25	
Ethylbenzene	1.41	0.22	"	1.35		104	79-114	4.17	25	
Hexachlorobutadiene	1.52	0.22	"	1.35		113	68-131	1.31	25	
Isopropylbenzene	1.38	0.22	"	1.35		102	77-113	2.15	25	
p-Isopropyltoluene	1.33	0.22	"	1.35		98.5	74-115	1.49	25	
Methyl ethyl ketone	2.39	0.65	"	2.71		88.2	19-150	4.10	25	
Methyl isobutyl ketone	2.08	0.43	"	2.69		77.3	53-137	7.85	25	
Methyl tert-butyl ether	1.29	0.22	"	1.35		95.6	59-128	8.89	25	
Methylene chloride	1.31	0.22	"	1.35		97.0	72-114	5.93	25	
Naphthalene	1.41	0.22	"	1.35		104	75-118	0.00	25	
n-Propylbenzene	1.37	0.22	"	1.35		101	75-114	0.00	25	
Styrene	1.37	0.22	"	1.35		101	82-114	4.98	25	
1,1,1,2-Tetrachloroethane	1.56	0.22	"	1.35		116	84-118	0.00	25	

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Cheryl Watson For Sheri L. Speaks
Project Manager

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CHEMICAL EXAMINATION REPORT

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes sections for LCS Dup (AD32209-BS1) and Matrix Spike (AD32209-MS1).

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Tetra Tech/MFG, Inc.

Signature: Cheryl Watson
Cheryl Watson For Sheri L. Speaks
Project Manager

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Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like Bromoform, Chlorobenzene, etc.

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Report Date: 05/19/03 09:29
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Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like 2,2-Dichloropropane, 1,1-Dichloropropene, etc.

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MFG, Inc - Arcata
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Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for Batch AD32209 - EPA 5030 Soil MS and surrogate compounds.

Batch AD32511 - EPA 5030 Soil MS

Table for Blank (AD32511-BLK1) with columns: Analyte, Result, PQL, Units. Lists various compounds like Acetone, Benzene, Bromobenzene, etc.

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MFG, Inc - Arcata
1165 G. Street, Suite E
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Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number Receipt Date/Time Client Code Client PO/Reference
A304264 04/09/2003 15:30 MFGARC

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes a list of analytes and their results for Batch AD32511 - EPA 5030 Soil MS.

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MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with 11 columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag

Batch AD32511 - EPA 5030 Soil MS

Blank (AD32511-BLK1)

Prepared: 04/21/03 Analyzed: 04/22/03

Main data table listing various chemical analytes (e.g., Methyl isobutyl ketone, Toluene, Xylenes) with their corresponding results, PQL values, and surrogate data.

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MFG, Inc - Arcata
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Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes sections for Batch AD32511 - EPA 5030 Soil MS, Blank (AD32511-BLK1), and LCS (AD32511-BS1).

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Project ID: SPI Arcata Sawmill

Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like Dichlorodifluoromethane, 1,1-Dichloroethane, etc.

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MFG, Inc - Arcata
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Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

<u>Order Number</u> A304264	<u>Receipt Date/Time</u> 04/09/2003 15:30	<u>Client Code</u> MFGARC	<u>Client PO/Reference</u>
--------------------------------	--	------------------------------	----------------------------

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32511 - EPA 5030 Soil MS										
LCS (AD32511-BS1)				Prepared: 04/21/03 Analyzed: 04/23/03						
1,2,3-Trichlorobenzene	0.0277	0.0050	"	0.0312		88.8	68-119			
1,2,4-Trichlorobenzene	0.0254	0.0050	"	0.0312		81.4	58-120			
1,1,1-Trichloroethane	0.0291	0.0050	"	0.0312		93.3	69-114			
1,1,2-Trichloroethane	0.0302	0.0050	"	0.0312		96.8	84-119			
Trichloroethene	0.0304	0.0050	"	0.0312		97.4	77-118			
Trichlorofluoromethane	0.0273	0.0050	"	0.0312		87.5	63-115			
Trichlorotrifluoroethane	0.0277	0.0050	"	0.0308		89.9	61-119			
1,2,3-Trichloropropane	0.0310	0.0050	"	0.0312		99.4	86-123			
1,2,4-Trimethylbenzene	0.0254	0.0050	"	0.0312		81.4	75-111			
1,3,5-Trimethylbenzene	0.0241	0.0050	"	0.0312		77.2	77-114			
Vinyl chloride	0.0292	0.0050	"	0.0312		93.6	47-142			
m,p-Xylene	0.0542	0.0050	"	0.0625		86.7	75-113			
o-Xylene	0.0264	0.0050	"	0.0312		84.6	79-112			
Xylenes (total)	0.0806	0.0050	"	0.0938		85.9	75-113			
Surrogate: Dibromofluoromethane	0.144		"	0.125		115	70-130			
Surrogate: Toluene-d8	0.147		"	0.125		118	70-130			
Surrogate: Bromofluorobenzene	0.136		"	0.125		109	70-130			
LCS Dup (AD32511-BSD1)				Prepared: 04/21/03 Analyzed: 04/23/03						
Acetone	0.154	0.020	mg/kg	0.123		125	3-147	3.19	25	
Benzene	0.0286	0.0050	"	0.0312		91.7	71-116	2.48	25	
Bromobenzene	0.0256	0.0050	"	0.0312		82.1	71-127	11.1	25	
Bromochloromethane	0.0286	0.0050	"	0.0312		91.7	77-113	2.08	25	
Bromodichloromethane	0.0278	0.0050	"	0.0312		89.1	85-121	2.18	25	
Bromoform	0.0233	0.0050	"	0.0312		74.7	57-138	16.9	25	
Bromomethane	0.0254	0.0050	"	0.0312		81.4	47-128	2.72	25	
n-Butylbenzene	0.0222	0.0050	"	0.0312		71.2	66-113	9.44	25	

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Project Manager

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CHEMICAL EXAMINATION REPORT

Page 30 of 38

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number A304264 Receipt Date/Time 04/09/2003 15:30 Client Code MFGARC Client PO/Reference

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like sec-Butylbenzene, tert-Butylbenzene, etc.

Batch AD32511 - EPA 5030 Soil MS

LCS Dup (AD32511-BSD1)

Prepared: 04/21/03 Analyzed: 04/23/03

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Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number Receipt Date/Time Client Code Client PO/Reference
A304264 04/09/2003 15:30 MFGARC

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like trans-1,3-Dichloropropene, Ethylbenzene, etc.

Batch AD32511 - EPA 5030 Soil MS

LCS Dup (AD32511-BSD1)

Prepared: 04/21/03 Analyzed: 04/23/03

Detailed table of results for LCS Dup (AD32511-BSD1) showing analyte names, results, PQL, units, spike levels, source results, %REC, %REC limits, RPD, RPD limits, and flags.

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Order Number A304264 Receipt Date/Time 04/09/2003 15:30 Client Code MFGARC Client PO/Reference

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes sections for Batch AD32511 - EPA 5030 Soil MS and Matrix Spike (AD32511-MS1).

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Order Number: A304264
Receipt Date/Time: 04/09/2003 15:30
Client Code: MFGARC
Client PO/Reference:

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Contains data for various compounds like 1,2-Dibromoethane, Dibromomethane, etc.

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Project No: 030229
Project ID: SPI Arcata Sawmill

Order Number Receipt Date/Time Client Code Client PO/Reference
A304264 04/09/2003 15:30 MFGARC

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Table with columns: Analyte(s), Result, PQL, Units, Spike Level, Source Result, %REC, %REC Limits, RPD, RPD Limit, Flag. Includes data for various compounds like Styrene, Toluene, and Xylenes, along with surrogate results.

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CHEMICAL EXAMINATION REPORT

Page 35 of 38

MFG, Inc - Arcata
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Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

<u>Order Number</u> A304264	<u>Receipt Date/Time</u> 04/09/2003 15:30	<u>Client Code</u> MFGARC	<u>Client PO/Reference</u>
--------------------------------	--	------------------------------	----------------------------

Chlorinated Phenols by Canadian Pulp Method - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD31611 - Solvent Extraction										
Blank (AD31611-BLK1)				Prepared: 04/10/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	ND	1.0	mg/kg							
2,3,5,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,6-Tetrachlorophenol	ND	1.0	"							
2,3,4,5-Tetrachlorophenol	ND	1.0	"							
Pentachlorophenol	ND	1.0	"							
Surrogate: Tribromophenol	0.0840		"	0.124		67.7	23-140			
LCS (AD31611-BS1)				Prepared: 04/10/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	0.0226	1.0	mg/kg	0.0250		90.4	20-99			
2,3,5,6-Tetrachlorophenol	0.0126	1.0	"	0.0250		50.4	23-110			
2,3,4,6-Tetrachlorophenol	0.0157	1.0	"	0.0250		62.8	21-97			
2,3,4,5-Tetrachlorophenol	0.0181	1.0	"	0.0250		72.4	14-151			
Pentachlorophenol	0.0130	1.0	"	0.0250		52.0	10-168			
Surrogate: Tribromophenol	0.100		"	0.124		80.6	23-140			
LCS Dup (AD31611-BSD1)				Prepared: 04/10/03 Analyzed: 04/14/03						
2,4,6-Trichlorophenol	0.0231	1.0	mg/kg	0.0250		92.4	20-99	2.19	50	
2,3,5,6-Tetrachlorophenol	0.0131	1.0	"	0.0250		52.4	23-110	3.89	50	
2,3,4,6-Tetrachlorophenol	0.0166	1.0	"	0.0250		66.4	21-97	5.57	50	
2,3,4,5-Tetrachlorophenol	0.0174	1.0	"	0.0250		69.6	14-151	3.94	50	
Pentachlorophenol	0.0132	1.0	"	0.0250		52.8	10-168	1.53	50	
Surrogate: Tribromophenol	0.103		"	0.124		83.1	23-140			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

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MAY 22 2003

Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks
Project Manager

5/19/03



Alpha Analytical Laboratories Inc.

208 Mason St. Ukiah, California 95482

e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Page 36 of 38

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

<u>Order Number</u> A304264	<u>Receipt Date/Time</u> 04/09/2003 15:30	<u>Client Code</u> MFGARC	<u>Client PO/Reference</u>
--------------------------------	--	------------------------------	----------------------------

Conventional Chemistry Parameters by APHA/EPA Methods - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD32307 - General Preparation										
Blank (AD32307-BLK1)				Prepared: 04/18/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	ND	50	mg/kg							
LCS (AD32307-BS1)				Prepared: 04/18/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	2920	50	mg/kg	3000		97.3	80-120			
LCS Dup (AD32307-BSD1)				Prepared: 04/18/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	3000	50	mg/kg	3000		100	80-120	2.70	20	
Duplicate (AD32307-DUP1)				Prepared: 04/17/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	7940	50	mg/kg		8200			3.22	200	
Matrix Spike (AD32307-MS1)				Prepared: 04/18/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	10300	50	mg/kg	2500	8200	84.0	80-120			
Matrix Spike Dup (AD32307-MSD1)				Prepared: 04/18/03 Analyzed: 04/22/03						
Oil & Grease (HEM-SG)	12400	50	mg/kg	2500	8200	168	80-120	18.5	20	QM-05

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MAY 29 2003

Tetra Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks
Project Manager

5/19/03



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CHEMICAL EXAMINATION REPORT

Page 37 of 38

MFG, Inc - Arcata
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Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
A304264	04/09/2003 15:30	MFGARC	

TPH as Diesel and Motor Oil by EPA Method 8015 Modified - Quality Control

Analyte(s)	Result	PQL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Flag
Batch AD31615 - CA LUFT - orb shaker										
Blank (AD31615-BLK1)				Prepared: 04/16/03 Analyzed: 04/17/03						
TPH as Diesel	ND	1.0	mg/kg							
TPH as Motor Oil	ND	2.0	"							
Surrogate: 1,4-Bromofluorobenzene	4.80		"	13.7		35.0	25-132			
LCS (AD31615-BS1)				Prepared: 04/16/03 Analyzed: 04/17/03						
TPH as Diesel	37.3	1.0	mg/kg	40.5		92.1	70-130			
TPH as Motor Oil	41.1	2.0	"	40.6		101	70-130			
Surrogate: 1,4-Bromofluorobenzene	7.84		"	13.7		57.2	25-132			
LCS Dup (AD31615-BSD1)				Prepared: 04/16/03 Analyzed: 04/17/03						
TPH as Diesel	40.0	1.0	mg/kg	40.5		98.8	70-130	6.99	20	
TPH as Motor Oil	40.9	2.0	"	40.6		101	70-130	0.488	20	
Surrogate: 1,4-Bromofluorobenzene	9.26		"	13.7		67.6	25-132			

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MAY 23 2003

Alpha Tech/MFG, Inc.

Cheryl Watson For Sheri L. Speaks
Project Manager

5/19/03



Alpha Analytical Laboratories Inc.

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CHEMICAL EXAMINATION REPORT

Page 38 of 38

MFG, Inc - Arcata
1165 G. Street, Suite E
Arcata, CA 95521
Attn: Matt Hillyard

Report Date: 05/19/03 09:29
Project No: 030229
Project ID: SPI Arcata Sawmill

<u>Order Number</u>	<u>Receipt Date/Time</u>	<u>Client Code</u>	<u>Client PO/Reference</u>
A304264	04/09/2003 15:30	MFGARC	

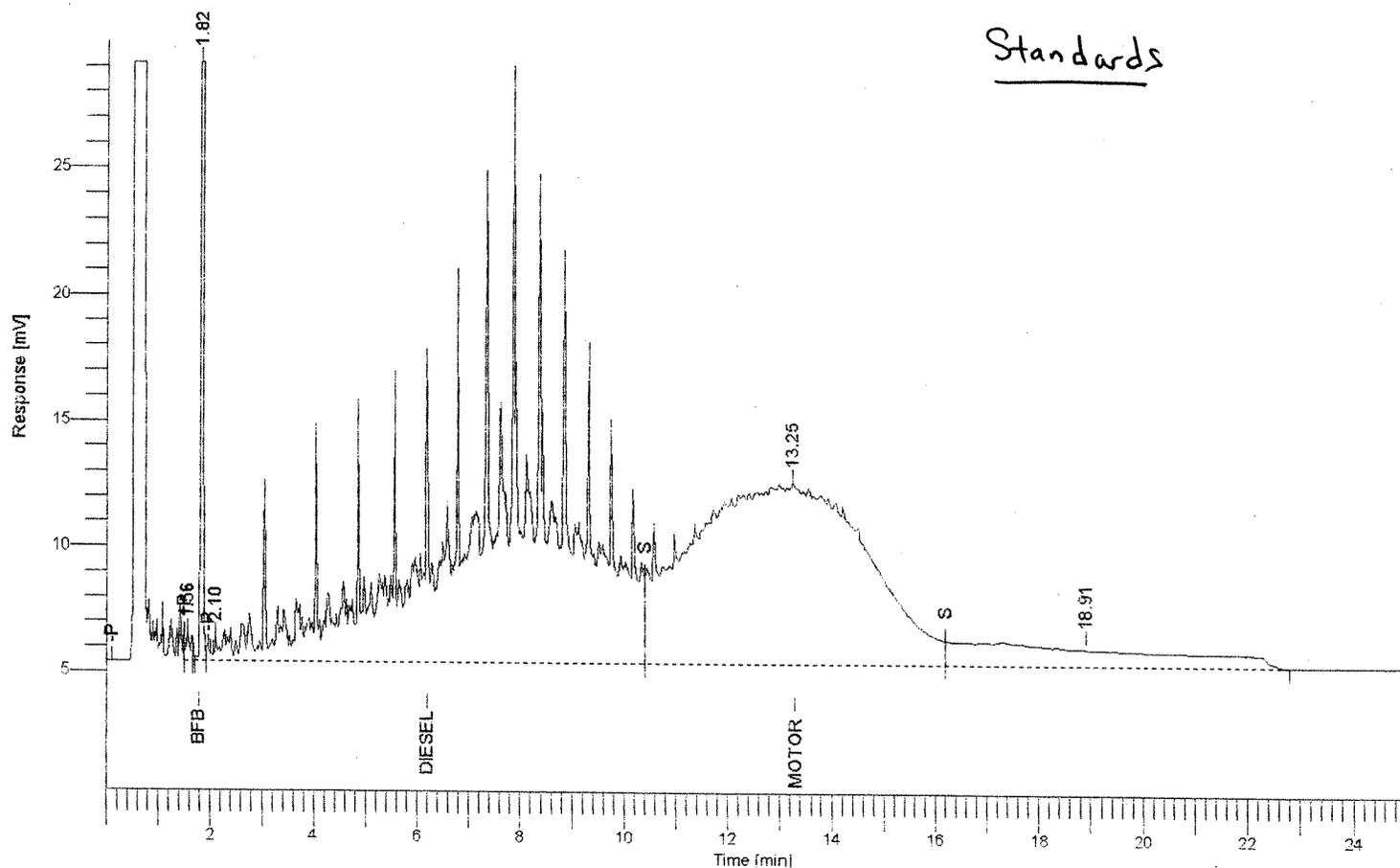
Notes and Definitions

- D-09 Results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- R-06 The Reporting Limits for this analysis have been raised to account for matrix interference.
- DFT Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference
- PQL Practical Quantitation Limit

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MAY 23 2003
Tetra Tech/MFG, Inc:

Software Version : 6.1.2.0.1:D19 Date : 4/17/03 2:37:1
 Sample Name : DM(41.12) Data Acquisition Time : 4/17/03 2:12:12
 Instrument Name : DsMo PM
 Rack/Vial : 0/0
 Sample Amount : 1.000000 Channel : A
 Cycle : 117 Operator : manager
 Dilution Factor : 1.000000

Result File : C:\PenExe\TcWS\Stats\Data\ATDAT956.rst
 Sequence File : C:\PenExe\TcWS\Stats\Sequences\Seq_DsMo_041403.seq



Diesel/Motor Oil

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	1.56		0.007	6809	953
2	1.82	BFB	8.732	238950	85715
3	2.10	Diesel	40.985	1931500	841
4	13.25	Motor Oil	43.026	1721194	7279
5	18.91		0.249	249327	648
			92.998	4147780	95436

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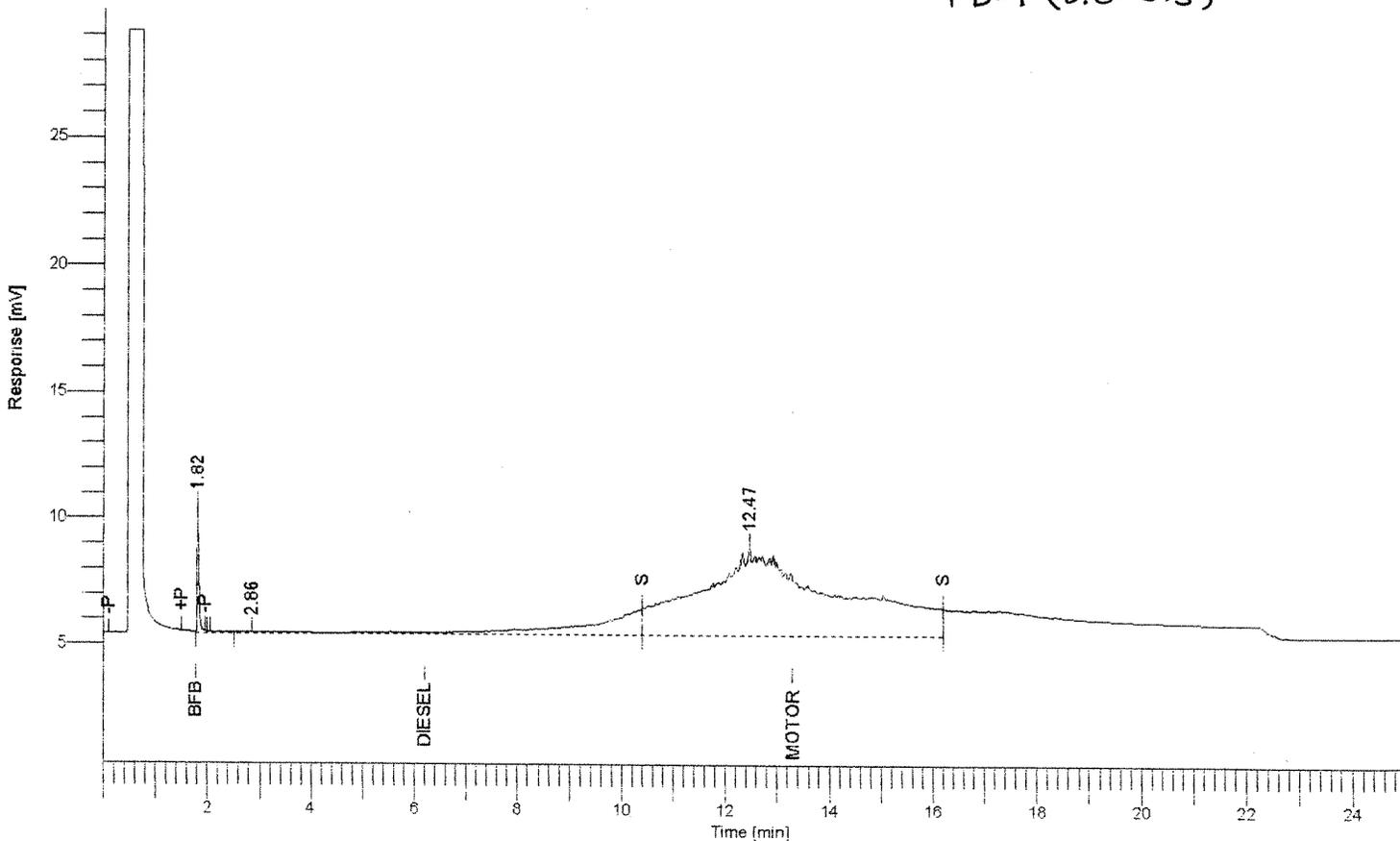
MFG, Inc.

```

Software Version : 6.1.2.0.1:D19      Date : 4/17/03 11:19:
Sample Name      : A304264-01@10     Data Acquisition Time : 4/17/03 10:54:3
Instrument Name  : DsMo2              AM
Rack/Vial       : 0/0
Sample Amount   : 1.000000           Channel : A
Cycle          : 112                 Operator  : manager
                                           Dilution Factor : 1.000000
    
```

Result File : C:\PenExe\TcWS\Stats\Data\ATDAT951.rst
 Sequence File : C:\PenExe\TcWS\Stats\Sequences\Seq_DsMo_041403.seq

PD-1 (0.0-0.5)



Diesel/Motor Oil

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	1.82	BFB	0.782	13703	3990
2	2.86	Diesel	1.691	87569	76
3	12.47	Motor Oil	15.622	627154	3539
			18.096	728426	7605

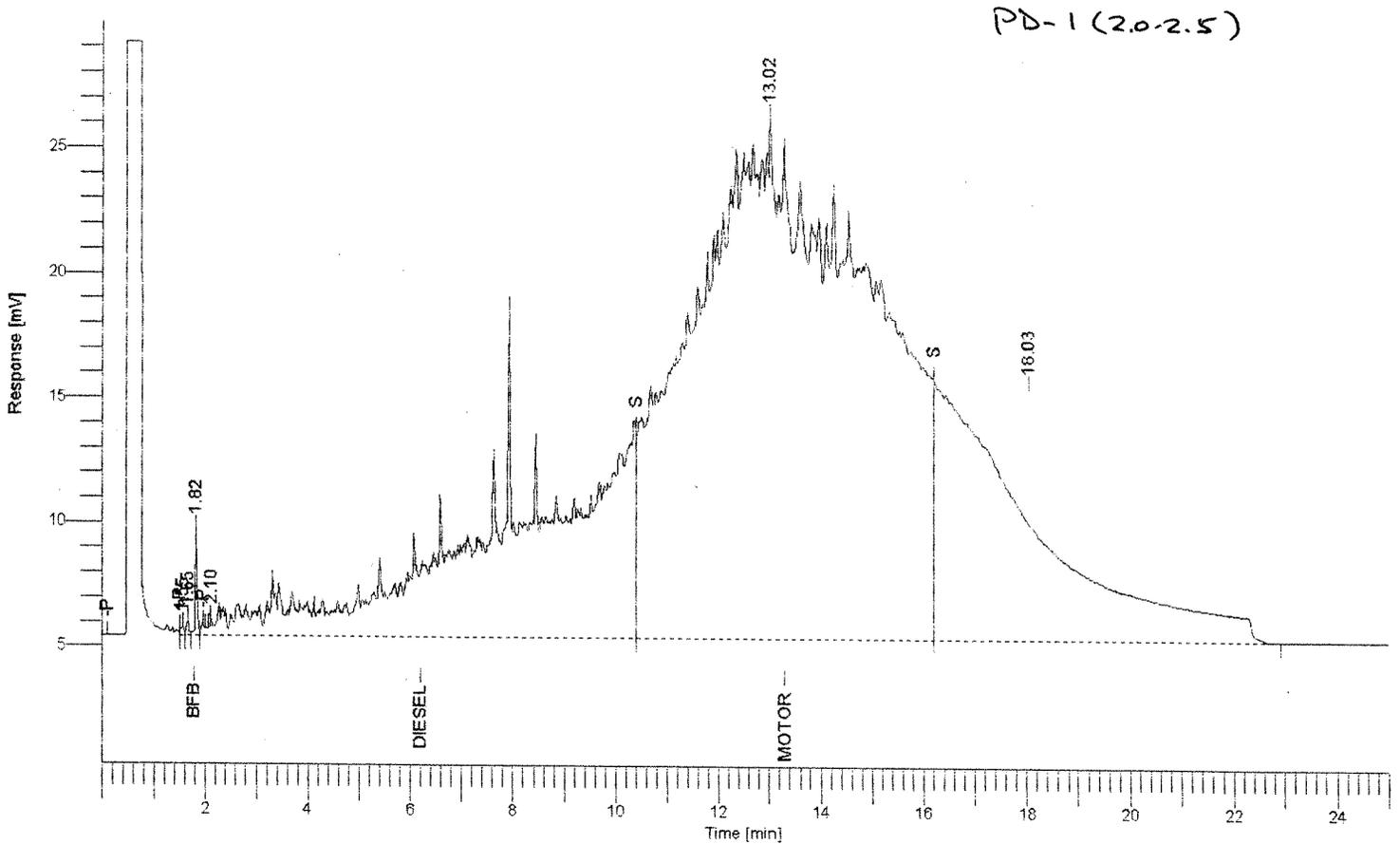
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MFG, Inc.

Software Version : 6.1.2.0.1:D19 Date : 4/17/03 11:59
 Sample Name : A304264-02@10 Data Acquisition Time : 4/17/03 11:34:00
 Instrument Name : DsMo2 Rack/Vial : C/O
 Sample Amount : 1.000000 Channel : A
 Cycle : 113 Operator : manager
 Dilution Factor : 1.000000

Result File : C:\PenExe\TcWS\Stats\Data\ATDAT952.rst
 Sequence File : C:\PenExe\TcWS\Stats\Sequences\Seq_DsMo_041403.seq



Diesel/Motor Oil

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	1.55		0.002	1670	338
2	1.65		0.002	2297	546
3	1.82	BFB	0.676	10662	3414
4	2.10	Diesel	32.524	1535987	616
5	13.02	Motor Oil	126.189	5001560	20866
6	18.03		1.395	1394919	4745
			160.788	7947095	30526

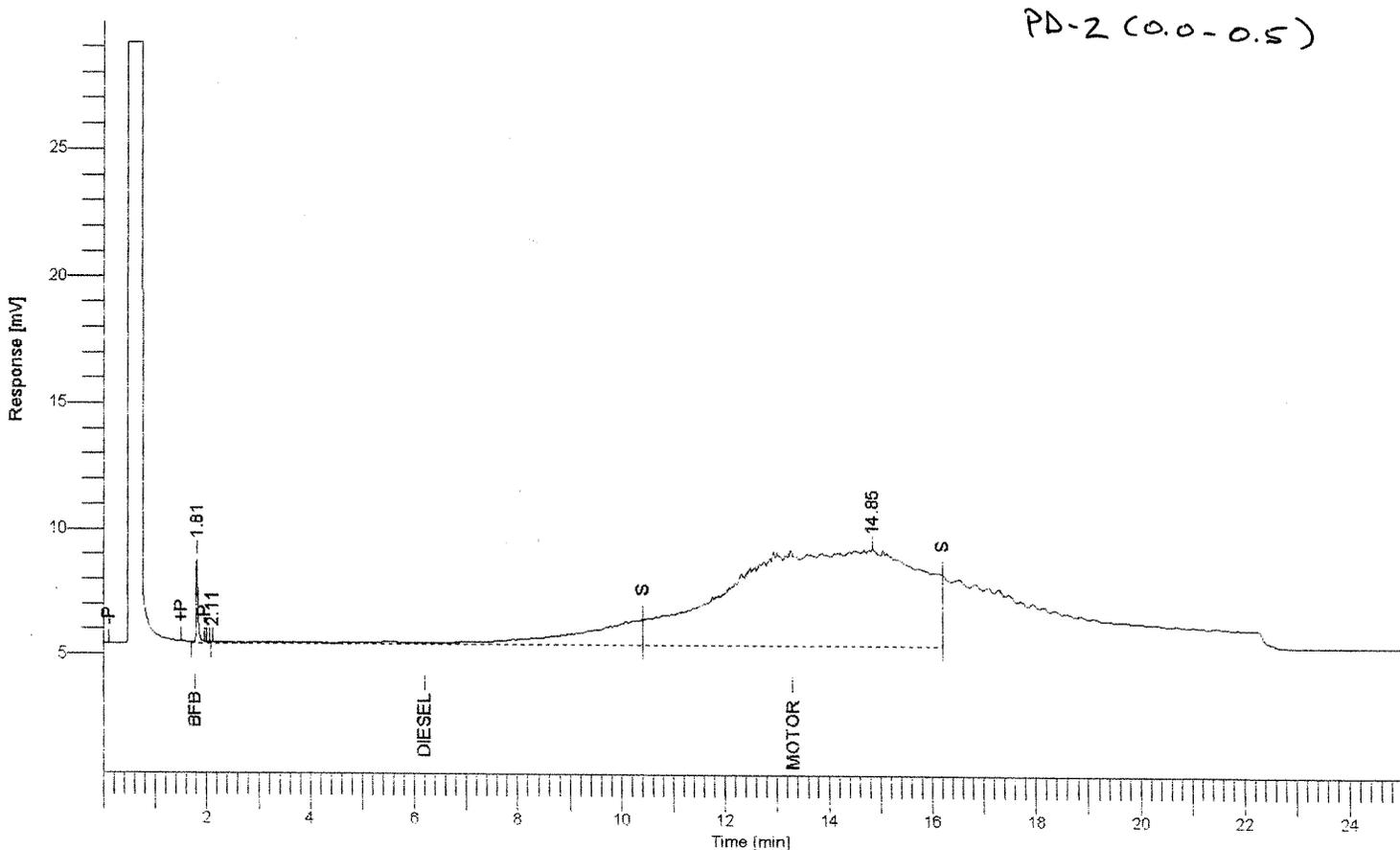
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MFG, Inc.

Software Version : 6.1.2.0.1:D19 Date : 4/17/03 12:38:
 Sample Name : A304164-03@10 Data Acquisition Time : 4/17/03 12:13:3
 Instrument Name : DsMo2 PM
 Rack/Vial : 0/0
 Sample Amount : 1.000000 Channel : A
 Cycle : 114 Operator : manager
 Dilution Factor : 1.000000

Result File : C:\PenExe\TcWS\Stats\Data\ATDAT953.rst
 Sequence File : C:\PenExe\TcWS\Stats\Sequences\Seq_DsMo_041403.seq



Diesel/Motor Oil

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	1.81	BFB	0.665	10330	3089
2	2.11	Diesel	2.034	103741	68
3	14.85	Motor Oil	24.604	986438	3867
			27.303	1100509	7024

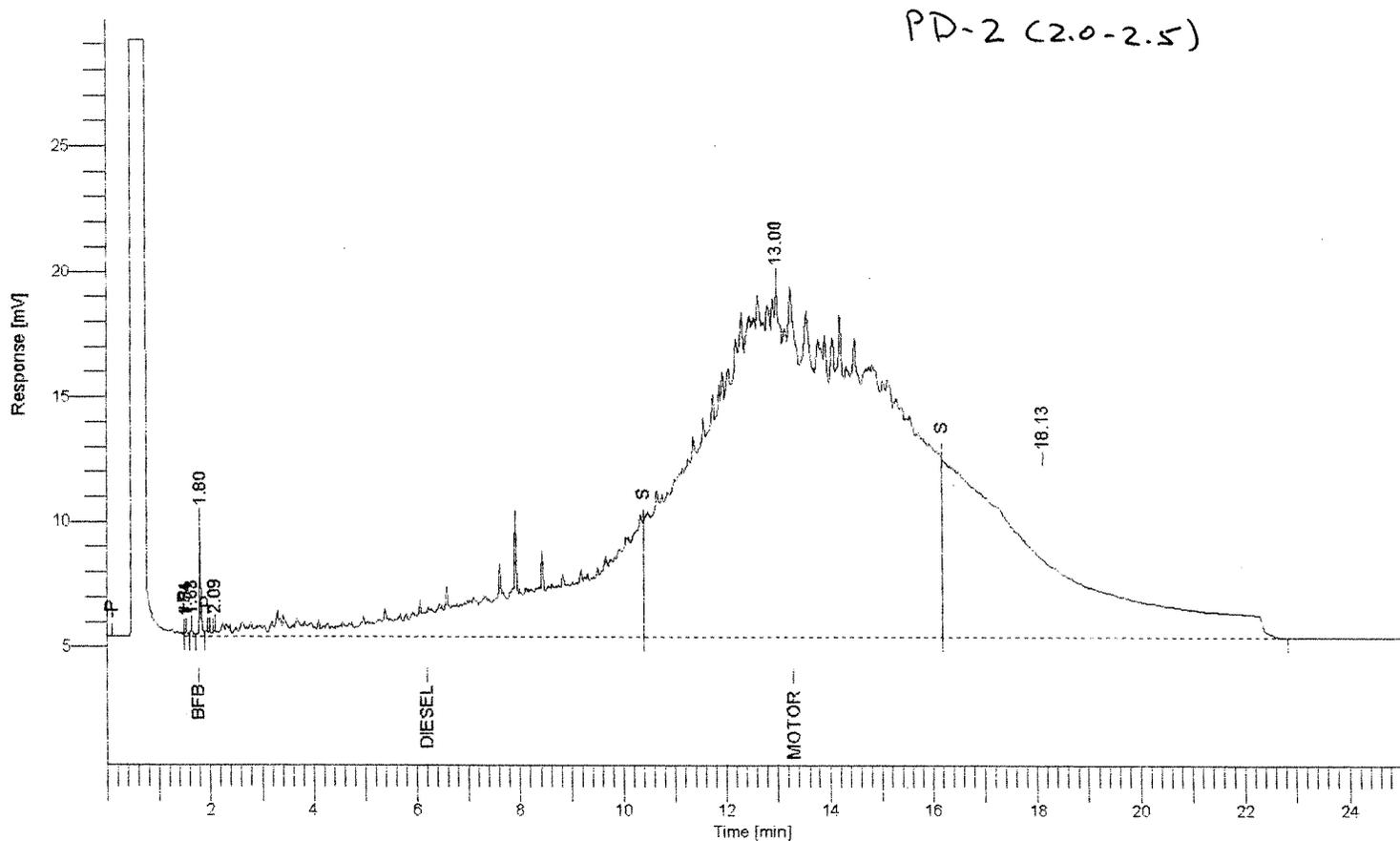
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MFG, Inc.

Software Version : 6.1.2.0.1:D19 Date : 4/17/03 1:18:11
 Sample Name : A304164-04@10 Data Acquisition Time : 4/17/03 12:53:00
 Instrument Name : DsMo 2 PM
 Rack/Vial : 0/C
 Sample Amount : 1.000000 Channel : A
 Cycle : 115 Operator : manager
 Dilution Factor : 1.000000

Result File : C:\PenExe\TcWS\Stats\Data\ATDAT954.rst
 Sequence File : C:\PenExe\TcWS\Stats\Sequences\Seq_DsMo_041403.seq



Diesel/Motor Oil

Peak #	Time [min]	Component Name	Raw Amount	Area [uV*sec]	Height [uV]
1	1.54		0.001	863	186
2	1.63		0.001	1182	255
3	1.80	BFB	0.678	10721	3572
4	2.09	Diesel	14.174	675316	273
5	13.00	Motor Oil	84.672	3371417	14232
6	18.13		0.991	991448	3103
			100.518	5050946	21621

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MFG, Inc.

MFG, Inc.

CHAIN-OF-CUSTODY RECORD AND REQUEST FOR ANALYSIS

COC No. **43288**

Arcata Office
1165 G Street, Suite E
Arcata, CA 95521-5817
Tel: (707) 826-8430
Fax: (707) 826-8437

Boulder Office
4900 Pearl East Circle
Suite 300W
Boulder, CO 80301-6118
Tel: (303) 447-1823
Fax: (303) 447-1836

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17770 Cartwright Road
Suite 500
Irvine, CA 92614-5850
Tel: (949) 253-2951
Fax: (949) 253-2954

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Wallace, ID
83873-0030
Tel: (208) 556-6811
Fax: (208) 556-7271

San Francisco Office
180 Howard Street, Suite 200
San Francisco, CA 94105-1617
Phone (415) 495-7110 - Fax (415) 495-7107

Seattle Office
19203 36th Avenue W.
Suite 101
Lynnwood, WA 98036-5707
Tel: (425) 921-4000
Fax: (425) 921-4040

PROJECT NO: 030229 PROJECT NAME: SPI Arcata Sawmill PAGE: 1 OF: 2
 SAMPLER (Signature): [Signature] PROJECT MANAGER: Ed Conti DATE: 4/8/03
 METHOD OF SHIPMENT: Carrier CARRIER/WAYBILL NO: _____ DESTINATION: Alpha Analytical

Field Sample Identification	SAMPLES								ANALYSIS REQUEST							
	Sample		Preservation				FILTRATION*	Containers			Constituents/Method			Handling		Remarks
	DATE	TIME	Matrix*	HCl	HNO ₃	H ₂ SO ₄		COLD	VOLUME (ml/oz)	TYPE*	NO.	TEPH Distel/Pro to a-1 8015M, Silica gel DiV Grease Fe 1664 Vol. 020 + EDC/EDB PCP/PCP Candeur 028 TPPH gasoline 5030/015 m	HOLD	RUSH	STANDARD	
PD-1 (0-.5)	4/8/03		SO				✓		4-oz	G	1	✓	✓	✓		A304264-1
PD-1 (2-2.5)	4/8/03		SO				✓		4-oz	G	1	✓	✓	✓		-2
PD-2 (0-.5)	4/8/03		SO				✓		4-oz	G	1	✓	✓	✓		-3
PD-2 (2-2.5)	4/8/03		SO				✓		4-oz	G	1	✓	✓	✓		-4
WO-1	4/8/03		AQ				✓		1L	G	2	✓	✓			-5
WO-1	4/8/03		AQ	✓			✓		70ml	G	6		✓	✓		-6
TOTAL NUMBER OF CONTAINERS								LABORATORY COMMENTS/CONDITION OF SAMPLES							Cooler Temp:	

RELINQUISHED BY:				RECEIVED BY:			
SIGNATURE	PRINTED NAME	COMPANY	DATE	TIME	SIGNATURE	PRINTED NAME	COMPANY
<u>[Signature]</u>	J. Trivolo	MFG	4/8/03	10:15	<u>[Signature]</u>	John Taylor	Alpha
<u>[Signature]</u>	John Taylor	Alpha	4/9/03	15:30	<u>[Signature]</u>	Shari Speaks	Alpha LABORATORY

*KEY Matrix: AQ - aqueous NA - nonaqueous SO - soil SL - sludge P - petroleum A - air OT - other Containers: P - plastic G - glass T - teflon B - brass OT - other Filtration: F - filtered U - unfiltered
 DISTRIBUTION: PINK: Field Copy YELLOW: Laboratory Copy WHITE: Return to Originator